

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
MICROSOFT CORPORATION
Attention: Sharon Rydberg (sharonr-8-2321) LCA, International Patent Department One Microsoft Way, 8/2321 Redmond Washington 98052-6399 USA

PCT

MICROSOFT PATENT DEPT.
AUG 20 2008
0 PD NO 81NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing
(day/month/year) 05 AUGUST 2008 (05.08.2008)

Applicant's or agent's file reference 320192.03 WO	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US2008/054481	International filing date (day/month/year) 20 FEBRUARY 2008 (20.02.2008)
Applicant MICROSOFT CORPORATION	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.**Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70**For more detailed instructions,** see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4 RemindersShortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/KR

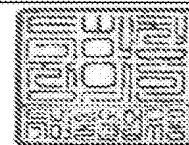
Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro,
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

COMMISSIONER

Telephone No. 82-42-481-5209



NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see PCT Applicant's Guide, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see PCT Applicant's Guide, Volume I/A, paragraph 296).

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examination Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are numbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same manners; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in canceling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1 - 10 unchanged, claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceed 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rule 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the PCT Applicant's Guide, Volume II.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
MICROSOFT CORPORATION

Attention: Sharon Rydberg (sharonr-8-2321) LCA,
International Patent Department One Microsoft Way, 8/2321
Redmond Washington 98052-6399 USA

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **05 AUGUST 2008 (05.08.2008)**

Applicant's or agent's file reference

320192.03 WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2008/054481

International filing date (day/month/year)

20 FEBRUARY 2008 (20.02.2008)

Priority date(day/month/year)

21 FEBRUARY 2007 (21.02.2007)

International Patent Classification (IPC) or both national classification and IPC

H04N 9/77(2006.01)I

Applicant

MICROSOFT CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION


If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR

 Korean Intellectual Property Office
Government Complex-Daejeon, 139
Seonsa-ro, Seo-gu, Daejeon 302
Republic of Korea
Facsimile No. 82-42-472-7140

Date of completion of this opinion

05 AUGUST 2008 (05.08.2008)

Authorized officer

SHIN, Jae Chul

Telephone No.82-42-481-8215



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2008/054481

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in electronic form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2008/054481

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-24	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-24	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims	None	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: JP 2006-279741 A

D2: WO 99-59329 A2

1. Novelty and Inventive step

The present invention relates to a method for efficient compression and decompression of digital media data.

The method in independent Claim 1 of the present invention includes: receiving digital image data for an image, the digital image data comprising downsampled chroma information; determining chroma position information for the downsampled chroma information according to a chroma position rule that maps the chroma position information to phase information in an X dimension and phase information in a Y dimension, wherein the chroma position rule facilitates horizontal and vertical flipping or rotating of the image; representing the chroma position information with one or more syntax element in an encoded bitstream; and outputting the encoded bitstream.

D1 discloses a method and apparatus for image compression and image reading which includes a setting stage of setting a processing target region on a digital image; a grouping stage of grouping pixels constituting the processing target region for each pixel with little color difference; a selecting stage of selecting a replacement target group based on feature amounts of the groups; a location information generating stage of indicating a location of each of the pixels belonging to the replacement target group; a replacing stage of replacing the color of each of pixels belonging to the replacement target group with the color of surrounding pixels; a digital image compressing stage of generating image compression data by compressing the digital image after the color of each of the pixels is replaced; and an output stage of outputting color data representing the representative color of the replacement target group, the location information and the image compression data in an associated manner.

(continued on the Supplemental sheet)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2008/054481

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

(Box No. V)

D2 discloses a method and apparatus for compressing a portion of video information in which An incoming frame is compressed block-by-block and placed in temporary storage. A corresponding block of a later frame is also compressed. Both blocks are decoded back into the transform domain and the two blocks are compared in the transform domain. Color rotation on compressed color information is integrated with overall compression and is performed upon the chrominance transform pyramids after transformation of the video signal rather than performing a rotation on the raw signal itself. Color rotation is performed at any stage and uses serial multiplication (shift and add) for more efficient processing, rather than using parallel multiplication.

However, neither D1 nor D2 reveals the method of Claim 1. Thus, the invention, as in Claim 1, is considered to be novel(PCT Article 33(2)) and to involve an inventive step(PCT Article 33(3)). Claims 2-11, which are dependent on Claim 1, also comply with PCT Article 33(2) and PCT Article 33(3) as they are dependent claims. Claims 7-9, which are dependent on Claim 6, also comply with PCT Article 33(2) and PCT Article 33(3) as they are dependent claims.

The methods of independent Claims 12, 19 and 21, which are the corresponding claims essentially to the technical features of method Claim 1, based on the above mentioned reasons, also involve a novelty under PCT Article 33(2) and an inventive step under PCT Article 33(3). Claims 13-18, which are dependent on Claim 12, also comply with PCT Article 33(2) and PCT Article 33(3) as they are dependent claims. Claims 20, which is dependent on Claim 19, also complies with PCT Article 33(2) and PCT Article 33(3) as it is dependent claim. Claims 22-24, which are dependent on Claim 21, also comply with PCT Article 33(2) and PCT Article 33(3) as they are dependent claims.

2. Industrial applicability

Claims 1-24 meet the criteria of PCT Article 33(4), because the claimed invention can be made in industry.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 320192.03 WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2008/054481	International filing date (<i>day/month/year</i>) 20 FEBRUARY 2008 (20.02.2008)	(Earliest) Priority Date (<i>day/month/year</i>) 21 FEBRUARY 2007 (21.02.2007)
Applicant MICROSOFT CORPORATION		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of :

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. I

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

b. ☐ none of the figure is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/054481**A. CLASSIFICATION OF SUBJECT MATTER***H04N 9/77(2006.01)1*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 H04N, G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS, SEARCH TERMS: CHROMA, POSITION, INFORMATION, FLIP, ROTATION, and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2006-279741 A (SEIKO EPSON CO., LTD.), 12 October 2006 See abstract, page2, paragraph<7>-page4, paragraph<18>	1-24
A	WO 99-59329 A2 (INTERVAL RESEARCH CO., LTD.), 18 November 1999 See abstract, page15, line25-page32, line27	1-24

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

05 AUGUST 2008 (05.08.2008)

Date of mailing of the international search report

05 AUGUST 2008 (05.08.2008)

Name and mailing address of the ISA/KR

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Facsimile No. 82-42-472-7140

Authorized officer

SHIN, Jae Chul

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/054481

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2006-279741 A	12.10.2006	NONE	
WO 99-59329 A2	18.11.1999	AT 272292 E	15.08.2004
		AU 1999-40790 A1	29.11.1999
		AU 1999-40790 B2	29.11.1999
		AU 1999-40790 A1	29.11.1999
		AU 768853 B2	08.01.2004
		CA 2331852 AA	18.11.1999
		CA 2331852 A1	18.11.1999
		DE 69918980 C0	02.09.2004
		DE 69918980 T2	11.08.2005
		EP 1078504 A2	28.02.2001
		EP 1078504 B1	28.07.2004
		EP 1078504 A2	28.02.2001
		EP 1078504 B1	28.07.2004
		JP 2002-515699	28.05.2002
		JP 2002-515699 T2	28.05.2002
		US 6229929	08.05.2001
		US 6396948	28.05.2002
		US 6516030	04.02.2003
		US 7130351	31.10.2006
		US 6229929 B1	08.05.2001
		US 6229929 BA	08.05.2001
		US 6396948 B1	28.05.2002
		US 6396948 BA	28.05.2002
		US 6516030 B1	04.02.2003
		US 6516030 BA	04.02.2003
		US 6530078 BA	04.03.2003
		US 7130351 BA	31.10.2006
		WO 99-59329 A2	18.11.1999
		WO 99-59329 A3	03.02.2000